**NameofFaculty** **:Discipline** **:Semester** **:Subject** **:LessonPlanDuration** **:**

**LessonPlan**

**Naveen Partap**

**Electronics&Comm.Engg.3rd**

**ELECTRONICINSTRUMENTSANDMEASUREMENT16weeks**

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| --- | --- | --- | --- | --- |
| Week |  | Theory | Practical | |
| Lecture Day | Topic (IncludingAssignment/ Test) | Practical Day | Topic |
| 1st | 1 | Measurement,methodofmeasurement,types ofinstruments | 1st | Measurement of voltage, resistance, frequency using digital multimeter |
| 2 | Specifications of instruments Accuracy, precision |
| 3 | Specifications of instruments sensitivity, resolution, range, errors in measurement |
| 2nd | 4 | sources oferrors, limiting errors, | 2nd | Measurement of voltage, resistance, frequency using digital multimeter |
| 5 | loading effect, importance and applications of standards andcalibration |
| 6 | Assignment / test |
| 3rd | 7 | Principles of measurement of DC voltage | 3rd | Measurement of voltage, frequency, time periodand phase using CRO |
| 8 | Principles of measurement of DCcurrent |
| 9 | Principles of measurement of AC voltage |
| 4th | 10 | Principles of measurement of ACcurrent | 4th | Measurement of  voltage, frequency, time periodand phase using CRO |
| 11 | Principles of operationand construction of  permanent magnet movingcoil (PMMC) instruments |
| 12 | Moving iron type instruments |
| 5th | 13 | Assignment | 5th | Practical file Checkingand viva-voice |
| 14 | Revision / test |
| 15 | Construction and working of Cathode Ray Tube(CRT) |
| 6th | 16 | Blockdiagram description of a basic CROand triggeredsweeposcilloscope | 6th | Measurement of voltage, frequency, time and phase using DSO |
| 17 | Front panel controls |
| 18 | Specifications of CROandtheir explanation |
| 7th | 19 | Measurement of current,voltage, frequency | 7th | Measurement of voltage, frequency, time and phase using DSO |
| 20 | Measurement of current time periodand phase using CRO |
| 21 | Digitalstorage oscilloscope (DSO)block diagram andworking principle |
| 8th | 22 | Assignment / Problem Taking | 8th | Measurement of Qof a coil |
| 23 | Class test |
| 24 | Wheat stonebridge |
| 9th | 25 | ACbridges: Maxwell’s induction bridge | 9th | Measurement of Qof a coil |
| 26 | Hay’s bridge,De-Sauty’s bridge, |
| 27 | Schering bridge and Anderson bridge |
| 10th | 28 | Bock diagram description of laboratorytype RLC bridge,specifications of RLC bridge | 10th |  |

11th

12th

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Blockdiagram and working principle of Q meter

Assignment Problem Taking Class test

Explanation of block diagram specifications of low frequency, RF generators

pulse generator, function generator Distortion factor meter

Instrumentation amplifier:its characteristics, need and working

Instrumentation amplifier need and working Assignment

Comparison of analog and digital instruments

Working principle of ramp,dual slope Workingprinciple of integration type digital

voltmeter

Blockdiagram and working ofa digital multi-meter

Specifications of digital multi-meter and their applications

Limitations of digital multi-meters

Working principle of logic probe,logic pulseranalyzer

Working principle of logic analyzer and signature analyzer

Revision Revision

11th

12th

13th

14th

15th

16th

Practical file Checkingand viva-voiceMeasurement of resistance and inductance of coil using RLC Bridge Measurement of impedance using Maxwell Induction Bridge

To findthe value of unknown resistance using Wheat Stone Bridge

Measurement of

distortion using Distortion Factor Meter

Use of logic pulser and logicpobe

Revision